MATERIAL SAFETY DATA SHEET

SRM Supplier: National Institute of Standards and Technology
Standard Reference Materials Program
Bldg. 202 Rm. 211
Gaithersburg, Maryland 20899

SRM Number: 84k
MSDS Number: 84k
SRM Name: Potassium Hydrogen Phthalate (Acidimetric Primary Standard)
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SECTION I. MATERIAL IDENTIFICATION

Material Name: Potassium Hydrogen Phthalate (Acidimetric Primary Standard)

Description: Colorless or white crystalline powder

Other Designations: Potassium Hydrogen Phthalate (potassium acid phthalate, potassium biphthalate, 1,2-benzenedicarboxylic acid monopotassium salt, *phthalic acid potassium acid salt*, acid K)

Chemical Formula: $KHC_8H_4O_4$

CAS Registration: 877-24-7

DOT Classification: Not hazardous by DOT regulations.

Manufacturer/ Supplier: Available from a number of suppliers.

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Component	Nominal Concentration	Exposure Limits and Toxicity Data
Potassium Hydrogen Phthalate	~ 100 %	No TLV established. Rat, Oral: LD_{LO}: 3200 mg/kg

SECTION III. PHYSICAL/ CHEMICAL CHARACTERISTICS

Potassium Hydrogen Phthalate
Appearance and Odor: Colorless or white crystals with no odor.
Molecular Weight: 204.22
Density: 1.636
Melting Point: 295 °C - 300 °C (decomposes)
Solubility in Water: Soluble in 12 parts cold water; 3 parts in boiling water.
Solubility in Other Compounds: Slightly soluble in alcohol.

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A **Method Used:** N/A **Autoignition Temperature:** N/A

Flammability Limits in Air (Volume %): **UPPER:** N/A
LOWER: N/A

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards have been identified. Dust/air mixtures may ignite or explode.

Extinguishing Media: Use dry chemical, carbon dioxide, foam, or water spray.

Special Fire Procedures: In a manufacturing or supplying facility, when large amounts are involved in a fire situation, fire-fighters should use self-contained breathing apparatus and protective clothing.

SECTION V. REACTIVITY DATA

Stability: **X** **Stable** ____ **Unstable**

Conditions to Avoid: Keep this material from excessive heat and moisture.

Incompatibility (Materials to Avoid): This material is incompatible with nitric acid; keep this material from strong oxidizing agents.

Hazardous Decomposition or Byproducts: Toxic fumes of carbon monoxide and carbon dioxide are produced.

Hazardous Polymerization: _____ **Will Occur** **X** **Will Not Occur**

SECTION VI. HEALTH HAZARD DATA

Route of Entry: **X** **Inhalation** **X** **Skin** **X** **Ingestion**

Health Hazards (Acute and Chronic): The main hazard associated with this material is its slight acidity which can result in irritation at contact points. Inhalation of dust or mist can be irritating. Ingestion by experimental rats indicates a slight toxicity; however, the full extent of the toxicological properties have not been thoroughly investigated.

Signs and Symptoms of Exposure: Irritation, headache, nausea, and vomiting are signs of over-exposure.

Medical Conditions Generally Aggravated by Exposure: N/A

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs		X
By the Occupational Safety and Health Administration (OSHA)		X

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Obtain medical assistance immediately.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Obtain medical assistance immediately.

Inhalation: If inhaled, remove the victim to fresh air. If breathing is difficult, give oxygen; if victim is not breathing, give artificial respiration. Obtain medical assistance if necessary.

Ingestion: If ingested, wash out mouth with water. Obtain medical assistance immediately.

TARGET ORGAN(S) OF ATTACK: Skin, eyes and upper respiratory tract.

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is Released or Spilled: Notify safety personnel of major spills and/or leaks. Sweep up spills, avoid dust promoting conditions, and place material in an appropriate container for disposal.

Waste Disposal: Dispose of waste in an approved landfill or incinerate. Follow all federal, state and local regulations.

Handling and Storage: Provide local exhaust ventilation in sufficient volume and pattern to keep concentration of hazardous ingredients below the minimal exposure at which irritation may occur. Wear appropriate protective clothing such as chemical safety goggles and/or a full face shield to prevent eye contact when working around heated benzoic acid.

> **Note:** Contact lenses pose a special problem; soft lenses may absorb irritants and all lenses concentrate them. **DO NOT** wear contact lenses in the lab.

Store this material in tightly closed containers in a cool, dry, well ventilated area away from oxidizing agents. Eyewash stations and washing facilities should be readily available in areas of use and handling.

SECTION VIII. SOURCE DATA/ OTHER COMMENTS

Sources: MDL Information Systems, MSDS *Potassium Hydrogen Phthalate,* Dec. 8, 1998.
The Merk Index, 11th Ed., 1989.
The Sigma Aldrich Library of Chemical Safety Data, Ed. II, 1988.

Disclaimer: Physical and chemical data contained in this MSDS are provided for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data on the MSDS. The certified values for this material are given only on the NIST Certificate of Analysis.